TOWN OF RANDOLPH BIOMASS DISTRICT ENERGY OPTIONS

Town of Randolph, Vermont

OVERVIEW

The Randolph Area Community Development Corporation (RACDC) sought assistance from the Clean Energy Development Fund (CEDF) and the Biomass Energy Research Center (BERC) in 2009 to look into renewable energy options for the Town of Randolph. The RACDC was awarded a $25,000 grant from the CEDF and commissioned the BERC to study the potential for biomass energy. It was determined that this form of energy could be cost-effective.

FEASIBILITY STUDY

The Biomass Energy Research Center carried out a preliminary evaluation of the logistic and economic feasibility of a biomass-fired district energy system that would provide thermal energy for the Town of Randolph's municipal, public, and private buildings and residences. The study focused on (1) a wood-fired district heating system and combined heat and power (CHP) and (2) the potential for co-locating a wood-pellet manufacturing plant at the same site. The following factors went into BERC's analysis:

> Analysis of Randolph's heating energy demand
> Assessment of current and projected fuel usage and costs in Randolph
> Assessment of current and projected local biomass fuel availability and costs
> Assessment of biomass technologies, including CHP equipment
> Projected costs of installing and operating a biomass heat / CHP system
> Assessment of the potential for a pellet plant in the Randolph area
> Financial feasibility analysis of each option identified

"The Biomass Energy Research Center concludes that the findings of the pre-feasibility study for the Randolph BDE system are favorable and recommends that the project should be pursued further." - BERC

FINDINGS

The BERC calculated that the buildings in the study area were using 870,000 gallons of oil per year and spending $2,175,000 at an oil price of $2.50 per gallon. It was determined that the installation of a biomass district energy system for the Town of Randolph would save heating customers over $100,000 in the first year, with the remaining $2,000,000 staying within the local and regional economy. They also decided that installing a biomass CHP system with a pellet mill co-located at the site would produce the most favorable form of cash flow. This would also be beneficial to rural portions of the community, seeing that these residents would have access to affordable, renewable thermal energy in the form of wood pellets. The Biomass Energy Research Center believes this option should be studied further at an engineering level, and that the results of this study should be considered for implementation and development.

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